APPENDIX A

Area-Wide Soil Contamination Project[1] Scope of Work

Introduction

Soil in large areas of Washington State is contaminated with low-to-moderate levels of arsenic and lead that has been caused by a range of historical activities. As Washington's population has grown, many of these areas have been developed into residential neighborhoods, schools and parks. These development activities, which continue today, have created pressures for cleanup and raised a variety of health, environmental and marketplace concerns. The Departments of Ecology, Agriculture and Health and the Office of Community Development have decided to examine these issues and concerns and develop a statewide strategy for responding to widespread arsenic and lead soil contamination problems.

Project Objectives

The directors of the four agencies have identified three project objectives:

- Improve our understanding of the nature and geographic extent of area-wide soil contamination problems;
- Identify feasible measures for protecting the health of people who live and work on or near properties that contain widespread low-to-moderate levels of soil contamination; and
- Identify current institutional frameworks (e.g. laws, regulations, land use planning processes, etc) and changes that will improve efforts to prevent threats to public health posed by widespread low-to-moderate level soil contamination.

Task Descriptions

1. Project Management

- **Task 1.1: Task Management:** The Contractor will provide day-to-day project management to ensure that tasks and products meet Ecology's needs and are completed in accordance with agreed-upon schedules and budgets. This includes monitoring work progress, coordinating project activities, overseeing document preparation and responding to emerging circumstance that might require modifications to specific tasks, budgets and timelines.

[1] A wide range of area-wide contamination problems have been identified in Washington. These include groundwater contamination resulting from the use of certain pesticides (e.g. ethylene dibromide (EDB)), sediment contamination (e.g. polychlorinated biphenyls (PCBs)) and soil contamination problems. While many of these problems are inter-connected, the primary focus of this project is arsenic and lead soil contamination and potential threats resulting from direct contact and/or accumulation in the food-chain.

- **Task 1.2: Subcontractor Agreements:** The Contractor shall prepare and finalize agreements with each subcontractor. The Contractor shall provide Ecology with copies of all signed agreements.

- **Task 1.3: Reporting and Client/Team Communication:** The Contractor will submit monthly progress reports to Ecology. In addition, the Contractor will maintain verbal and electronic communication with the Ecology project manager and task managers on at least a weekly basis in order to provide status updates, prioritize tasks, discuss progress on ongoing tasks and deliverables, develop solutions to problems and maintain or revise schedules and timelines.

- **Task 1.4: Invoicing:** The Contractor will monitor costs and provide weekly updates to task managers. The Contractor will submit regular invoices and supporting documentation in accordance with the guidelines in Appendix B of this agreement.

- **Task 1.5: Kickoff Meeting:** The Contractor will organize and facilitate a project kick-off meeting. The purpose of the meeting is to develop a common understanding on expectations, identify immediate steps to begin project implementation and begin to develop collaborative working relationships.

2. Area-Wide Soil Contamination Task Force

The Agency Directors have decided to form an Area-Wide Soil Contamination Task Force. The Task Force will be chartered by the Agency Directors and will include representatives from key stakeholder groups, academia and government agencies. The mission of the Task Force will be to provide the Agency Directors with recommendations on actions that can be taken to improve the ways in which area-wide soil contamination problems are addressed in Washington State.

- **Task 2.1: Task Management:** The Contractor shall that tasks and products meet Ecology's needs and are completed in accordance with agreed-upon schedules and budgets. This includes establishing and maintaining effective communication and coordination with Task Force members, individuals working on Task 2 activities, the task managers for other tasks and Ecology, monitoring progress on individual subtasks and identifying and responding to new circumstances.

- **Task 2.2: Task Force Formation:** The Agency Directors will invite individuals with a broad range of experience and expertise to participate on the Task Force. It is anticipated that the Task Force will include 15 - 20 members and include representatives from the agricultural community, government agencies and elected bodies, universities, environmental organizations, financial institutions and business groups. The Contractor shall provide advice and guidance on the selection of Task Force members and the Task Force charter.

- **Task 2.3: Issue Identification**: Prior to beginning the Task Force process, Ecology and the Contractor will meet with each task force member. The purpose of these initial conversations is to provide background on issues and concerns and prepare for a productive and collaborative task force process. These meetings represent a subset of the informational meetings described in Task 6.2.

- **Task 2.4: Meeting Facilitation**: The Task Force will meet on a regular basis (@ once every two months for approximately 18 months). Meetings will be open to the public and will be scheduled to ensure Task Force review prior to finalizing individual tasks. The Contractor will be responsible for preparation and distribution of meeting agendas, discussion materials and meeting summaries. All information will be developed in close consultation with the assigned Ecology staff person. The Contractor will also provide a facilitator for each Task Force meeting. For purposes of this project, facilitation includes: (1) assisting Ecology to lead the Task Force through the meeting agenda; (2) recording issues, concerns and decisions; (3) preparing written meeting summaries.

- **Task 2.5: Chapter 2 of the AWCTF Report:** The Contractor will prepare a report that integrates the technical memoranda and issue papers prepared under Tasks 3.2 through 3.10. This report will form the basis for Chapter 2 of the Task Force Report and Recommendations.

- **Task 2.6: Chapter 3 of the AWCTF Report:** The Contractor will prepare a report that integrates the technical memoranda and issue papers prepared under Tasks 4.2

through 4.4. This report will form the basis for Chapter 3 of the Task Force Report and Recommendations.

- **Task 2.7: Chapter 4 of the AWCTF Report:** The Contractor will prepare a report that integrates the technical memoranda and issue papers prepared under Tasks 5.2 through 5.8. This report will form the basis for Chapter 4 of the Task Force Report and Recommendations.

- **Task 2.8: Task Force Report and Recommendations***:* The Contractor will prepare a draft, a public draft and a final report and recommendations. The Task Force report and recommendations will represent a synthesis of technical products prepared under Tasks 3, 4 and 5 and Task Force discussions and deliberations.

3. Geographic/Geochemical Assessment: Work Group I

Work Group I will be composed of technical staff from Ecology and other state agencies, a limited number of Task Force members (or technical staff from organizations represented on the Task Force) and the consultant team selected for this project. The primary responsibilities of Work Group I including the following:

- Develop/refine existing estimates on the nature and extent of area-wide contamination problems in Washington State.
- Develop methods that can be used by local agencies or other organizations to further define the nature and extent of area-wide contamination problems within their respective jurisdictions; and
- Evaluate and provide recommendations on methods for assessing the nature and extent of contamination problems at individual properties or projects.

To meet these objectives, the Contractor will perform the following tasks:

- **Task 3.1: Task Management:** The Contractor shall that tasks and products meet Ecology's needs and are completed in accordance with agreed-upon schedules and budgets. This includes establishing and maintaining effective communication and coordination with individuals working on Task 3 activities, the task managers for other tasks and Ecology, monitoring progress on individual subtasks and identifying and responding to new circumstances.
- **Task 3.2: Work Group Meetings:** The Contractor will organize and facilitate 6 Work Group II meetings. For purposes of this task, organize and facilitate includes selecting meeting times and locations, preparing meeting agendas and materials, facilitating the meetings and preparing meeting summaries that summarize key decisions, issues and discussion topics.
- **Task 3.3: Information Survey:** The Contractor will contact other state agencies and organizations in the United States to identify available information, the status of current and proposed activities, key issues and other materials relevant to meeting the project objectives identified in Section 1. The Contractor will use the results of this information survey to prepare a technical memorandum summarizing survey results relevant to the nature and extent of contamination (Task 3.1), protective measures (Task 4.1) and institutional issues (Task 5.1). For purposes of planning and budgeting for these three tasks, it should be assumed that the contractor will perform the following activities: (1) prepare survey questions for review and approval by Ecology; (2) conduct phone interviews with representatives from at least 10 – 20 organizations and/or individuals with experience and expertise on this issue; and (3) document survey findings in a technical memorandum.
- **Task 3.4: Preliminary Estimates on Nature and Extent of Area-wide soil contamination Problem:** The Contractor will compile currently available information and use that information to develop a preliminary estimate of the nature and extent of the

area-wide soil contamination problem in Washington State. Subtasks include the following:

- Acreage Estimates: The Contractor will prepare an estimate of the number of acres where lead arsenate pesticides were used in Washington State. Such estimates (or range of estimates) should be based on crop and pesticide information available from the Department of Agriculture and other information sources.

- Residual Soil Concentrations: The Contractor will estimate the levels of lead and arsenic that may be present in soils as a result of historical use of lead arsenate pesticides. This will involve: (1) developing conceptual site model; (2) compilation/review of crop recommendations that have been published by the U.S. Department of Agriculture, the Washington State Department of Agriculture, the Washington State Agricultural Extension Service or other information sources (3) estimate loadings associated with recommended application rates; and (4) estimate of soil concentrations resulting from cumulative application.

- Compilation of Available Soils Data: The Contractor will compile and summarize available data regarding arsenic and lead soil contamination problems in Washington. Table 4 summarizes the data that will be provided to the Contractor.

- Estimates on Nature and Extent of Area-wide soil contamination: The Contractor will prepare a preliminary estimate on the nature and extent of the arsenic and lead soil contamination problem in Washington State. The Contractor will use the results and findings from previous subtasks in preparing those estimates. The Contractor will prepare a draft and final issue paper which document the methods and assumptions used to develop the preliminary estimates.

- **Task 3.5: Yakima County Pilot Project (Mapping)**: Ecology, Yakima County and the City of Yakima are exploring ways to identify area-wide contamination problems arising from historic agricultural practices.[2] The purpose of that work is to: (1) develop a conceptual approach for identifying current and former orchard lands; (2) use that approach to identify current and former orchards in Yakima County; and (3) use information on current land use patterns to identify former orchard lands that may have been converted to residential neighborhoods or other non-agricultural uses. The Contractor will review this information and load the data into the project GIS system for use in Task 3.6.

- **Task 3.6: Yakima County Pilot Project - Confirmational Sampling:** The Contractor will measure soil contamination levels in representative areas in order to (1) evaluate the adequacy and accuracy of the estimates of lead arsenate use patterns identified through the GIS mapping performed under Task 3.3 and (2) evaluate the variability of soil contamination in these areas. Tasks include:

  - Prepare Sampling and Analysis Plan: The Contractor will prepare a sampling and analysis plan. The plan must include sampling objectives, a sampling design to

[2] This pilot project is limited to Yakima County and focuses on soil contamination resulting from the past application of lead/arsenate pesticides on orchard lands.

achieve sampling objectives (areas, number of samples, depth of samples, etc), sample collection and analysis (laboratory and/or field analytical) methods, quality assurance project plan, etc;

- Conduct Field Sampling: The Contractor will implement the approved sampling and analysis plan, work with Ecology staff who will be arranging site access, utilities checks (if applicable, assumed to be limited), mobilization, field sampling, sample preparation, etc. Site access will be the responsibility of Ecology.

- Soil Analyses: The Contractor will arrange for soil analyses (laboratory and/or field analytical techniques) to determine concentrations of arsenic and lead. The analytical methods should minimize (1) the number of non-detects of arsenic and lead and (2) interferences from other elements, such as iron. If field analytical techniques are used, the Contractor shall provide the operator and instrument to perform the analyses and shall provide for an appropriate number of duplicate laboratory analyses to calibrate and confirm the field analysis within acceptable ranges of accuracy and precision. The Contractor will catalog and archive all sample pulps and rejects pending further evaluation.

- Data Review and Summary: The Contractor will perform quality assurance reviews and summarize the results of the soils investigation in a technical memorandum. The technical memorandum will summarize the study methods and present the study results in tabular and GIS (map) formats. The contractor shall also submit the data in electronic format (Microsoft Access and GIS formats).

- **Task 3.7: Pilot Project Report**: The Contractor will prepare a draft and final report describing the findings and conclusions of the Yakima County Pilot Project. The report will integrate results and findings from Tasks 3.3 and 3.4. The draft report will be distributed for review and comment by Work Group I and the Task Force. The contractor will work with the Department to address all comments when preparing the final report and recommendations The pilot project report will include:

  - Task Summaries: The Contractor will summarize the methods, results and findings of Tasks 3.3 and 3.4.

  - Revised Population Exposure Estimates and Sampling Recommendations: The Contractor will update the population exposure estimates develop under Task 3.3. based on the results of the confirmational sampling. The Contractor will also provide recommendations on areas where Ecology should conduct additional sampling.

  - Evaluate Application of Yakima County Pilot Project to Other Areas: The Contractor will evaluate (e.g. technical feasibility, utility, costs, etc) and provide recommendations on the application of the pilot approach to other crops and other contaminants in the State of Washington.

- **Task 3.8: Tools for Identifying Area-wide Soil Contamination Problems**: The purpose of this task is to develop an approach that can be used by local governments to

identify area-wide contamination problems within their jurisdictions. The Contractor will complete the following tasks:

- General Methodology for Use By Other Jurisdictions: The Contractor will develop a general evaluation framework that can be used to define the nature and extent of area-wide soil contamination problems in Washington State.

- Boilerplate Scope of Work for Historic Data Review: The Contractor will define methods and procedures for using available information to identify potential area-wide soil contamination problems. This would include, but is not limited to, methods used in Yakima County if those methods are judged to be applicable to other jurisdictions.[3]

- Boilerplate Scope of Work for Confirmational Sampling (including grant language, sampling plan, QAPP, etc): The Contractor will develop a generic sampling and analysis protocol/guidance that can be used by local governments in their efforts to define/refine the extent of area-wide contamination problems within their jurisdictions. The guidance materials will be designed to: (1) evaluate the adequacy and accuracy of the estimates of pesticide use patterns by measuring contaminant concentrations in a representative sample of areas identified through the GIS mapping task and (2) evaluate the variability of soil contamination in these areas.[4]

- **Task 3.9: Regional Variations in Natural Background Concentrations**: The Contractor will compile and evaluate existing regional studies of arsenic and lead levels in soils that are relevant to characterizing regional variations in natural background levels. At a minimum, the Contractor shall evaluate the National Geochemical Database (USGS Open File 97-942). The Contractor shall identify, locate and evaluate existing data sets in terms of meeting the applicability to the overall study objective. The Contractor shall prepare a technical memorandum summarizing the results of this evaluation, provide initial conclusions on geographic variations (if any) in natural background concentrations and provide recommendations on other appropriate evaluations and field studies.

- **Task 3.10: Sampling Guidance:** The Contractor will prepare sampling guidance that can be used by land developers and property owners to determine whether the soils at individual properties contain levels of contamination that exceed the MTCA soil cleanup standards (unrestricted site uses). Tasks include:

  - Define Sampling Objectives: The Contractor will identify soil sampling objectives for each of the following situations:

[3] Public Health – Seattle King County is currently evaluating historic sources of lead and arsenic for Vashon and Maury Islands and the southern King County mainland. The methods and results from that work will also be considered as part of this subtask.

[4] The preparation of these materials will take into account sampling efforts in King and Pierce Counties that are scheduled (or have been performed) by Public Health Seattle King County and the Tacoma Pierce County Health Department, respectively.

- Proposed developments (e.g. homes, school, parks) on land previously used for agriculture and/or located within the area of contamination (contamination plume) surrounding large point sources.

- Existing developments (e.g. homes, school, parks) on land previously used for agriculture and/or located within the area of contamination (contamination plume) surrounding large point sources.

- Sample Designs/Strategies: The Contractor will prepare sampling design guidelines for proposed and existing development projects. This includes:

  - Sampling frequency
  - Sampling pattern
  - Sampling depth(s)
  - Sample collection methods

- Analytical Methods: The Contractor will identify appropriate analytical methods to be used when evaluating widespread low level soil contamination.

- Interim Guidelines: The Contractor will prepare a draft technical guidance memo that integrates the results from previous subtasks. The draft interim guidance memo should be modeled upon Section 1.4 of the Ecology Guidance for Remediation of Petroleum Contaminated Soils[5]. The draft technical guidance materials should include 2 case studies illustrating how the guidelines would be applied in the two scenarios described above (e.g. proposed development and existing development). The draft technical guidance materials will be distributed for review and comment. The Contractor will review all comments and identify recommended revisions to the draft guidance materials.

Task 3.11: Preparation for Task Force Meetings: The Contractor will prepare for Task Force meetings where Task 3 issues are being discussed. Meeting preparation includes review of draft reports and memoranda, preparation of briefings and coordination with the Task Force facilitator and/or Task Force members.

[5] Department of Ecology. 1995. Guidance for Remediation of Petroleum Contaminated Soils. Publication # 91-30. Available from the Department of Ecology, Toxics Cleanup Program.

4. Protective Measures: Work Group II

Work Group II will be composed of technical staff from Ecology and other state agencies, a limited number of Task Force members (or technical staff from organizations represented on the Task Force) and the consultant team selected for this project. The primary responsibilities of Work Group II including the following:

- Evaluate and provide recommendations on practical methods that individuals can take to reduce exposure to soil contaminants prior to the time that cleanup measures are selected and implemented[6];

- Coordinate pilot studies designed to evaluate the effectiveness and feasibility of soil cleanup/remediation methods for addressing widespread soil contamination problems; and

- Evaluate the effectiveness and cost of various remedial strategies for widespread low-to-moderate levels of soil contamination[7] and prepare recommendations on model remedies[8] for addressing such soil contamination problems.

To meet these objectives, the Contractor will perform the following tasks:

- **Task 4.1: Task Management:** The Contractor shall that tasks and products meet Ecology's needs and are completed in accordance with agreed-upon schedules and budgets. This includes establishing and maintaining effective communication and coordination with individuals working on Task 4 activities, the task managers for other tasks and Ecology, monitoring progress on individual subtasks and identifying and responding to new circumstances.

- **Task 4.2: Work Group Meetings:** The Contractor will organize and facilitate 6 Work Group II meetings. For purposes of this task, organize and facilitate includes selecting

[6] Practical exposure control alternatives include, but are not limited to, maintaining grass and landscaping cover over areas with pesticide residues, washing homegrown garden vegetables and washing hands after play or lawn or gardening activity.

[7] Remedial strategies include soil removal and disposal, in-place capping of contaminated soils, blending of contaminated soils with clean soils, and soil treatment.

[8] The MTCA rule defines "remedy" as "…any action or expenditure consistent with the purposes of chapter 70.105D RCW to identify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment including any investigative and monitoring activities with respect to the release or threatened release of a hazardous substance and any health assessments or health effects studies conducted in order to determine the risk or potential risk to human health. The MTCA rule amendments state that "…[t]he department may from time to time identify model remedies for common categories of facilities, types of contaminants, types of media, and geographic areas. In identifying a model remedy, the Department shall identify the circumstances for which application of the model remedy meets the requirements under WAC 173-340-360(3) for those components or portions of the site to which a model remedy applies…." The MTCA rule amendments also specify that "…[t]he purpose of model remedies is to streamline and accelerate the selection of cleanup actions that protect human health and environment, with a preference for permanent solutions to the maximum extent practicable. …. Where a site meets the circumstances identified by the department under subsection (2) of this section, the components of a model remedy may be selected as the cleanup action. At such sites, it shall not be necessary to conduct a feasibility study under WAC 173-340-350(8) or a disproportionate cost analysis under WAC 173-340-360(3) for those components or portions of the site to which a model remedy applies."

meeting times and locations, preparing meeting agendas and materials, facilitating the meetings and preparing meeting summaries that summarize key decisions, issues and discussion topics.

- **Task 4.3: Literature Review**: The Contractor will conduct a focused literature review and state survey to identify available information/products, the status of current and proposed activities, key issues and other materials relevant to meeting the Work Group II objectives. (See Task 3.1 description above)

- **Task 4.4: Model Remedies**:[9] The Contractor will evaluate alternatives and develop recommendations for model remedies that might be used to address widespread low-to-moderate level soil contamination problems. Tasks include:

    - **Define Categories**: The Contractor will identify the "…categories of facilities, types of contaminants, types of media, and geographic areas…" for which the Department might develop a model remedy. Categories to be evaluated should include, but are not limited to, the following:

        - Widespread arsenic and lead soil contamination in areas proposed for development;
        - Widespread arsenic and lead soil contamination in areas where development has occurred (e.g. homes, school, parks).

    - **Identify Range of Alternatives**: The Contractor will identify "…a reasonable number and type of alternatives…" for the "categories of facilities, types of contaminants, types of media and geographic areas…" identified in the previous task.. Alternatives to address widespread soil contamination that have been considered at one or more sites in Washington are identified in Table 6. The contractor will prepare a draft and final technical memorandum summarizing site categories and available alternatives.

    - **Cost Analysis Issue Paper**: The Contractor will develop planning level estimates of costs for implementing each of the model remedy alternatives. This includes the following subtasks:

        - Define a set of design and operating parameters and other key assumptions for "typical" sites at various locations in Washington (e.g. single undeveloped parcel, 40-80 acre development project and single developed parcels, etc)
        - Review the literature (e.g. current feasibility studies and remedial action experience) to obtain total and unit cost data for each component of the process (e.g. site investigation, cleanup alternatives evaluation, cleanup design, cleanup, post-cleanup monitoring)
        - Conduct telephone interviews with representatives of agencies and companies to validate and update information from available reports;

[9] The model remedy concept was incorporated into the MTCA rule amendments which state that "…[t]he department may from time to time identify model remedies for common categories of facilities, types of contaminants, types of media, and geographic areas…" Such model remedies are designed to streamline the remedy selection process and provide greater certainty to individuals/organizations contemplating a site cleanup.

- Create spreadsheet model incorporating cost data and operating parameters into a framework suitable for determining costs;
- Estimate costs in present value terms using appropriate discount rates;
- Determine the sensitivity of results to key project variables and assumptions.
- Prepare a draft issue paper that describes methods, results and conclusions.

- **Define Applicable Cleanup Standards/ARARs**: The Contractor will identify soil cleanup standards and applicable, relevant and appropriate requirements (ARARs) for each alternative. Subtasks include:

  - Identify soil cleanup standards for each of the "typical sites" identified above using the methods described in WAC 173-340-740;
  - Evaluate potential impacts associated with potential changes in cleanup standards based on new scientific information (e.g. consideration of new information on natural background levels)
  - Evaluate the potential variability in soil cleanup standards given the variability in site-specific features for sites within each category;
  - Identify ARARs for each of the "typical sites" identified above.

- **Human Health and Environmental Assessment**: The Contractor will evaluate the health and environmental risks associated with each alternative. This includes the following subtasks:

  - Define the characteristic features of one or more "typical" sites within each of the categories identified above;
  - Characterize the human health and environmental risks for each typical site;
  - Characterize the residual risks associated with implementing each alternative at each typical site;
  - Characterize the short-term risks associated with implementing each model remedy alternative (e.g. risks to workers, surrounding areas, etc.);
  - Evaluate the sensitivity of results to key variables and assumptions;
  - Prepare a draft issue paper that describes the methods, results and conclusions.

- **Permanent Solutions vs. Solutions That Are Permanent to the Maximum Extent Practicable**: The Contractor will evaluate the alternatives identified above in terms of their degree of permanence and compliance with the MTCA requirement for the use of solutions that are permanent to the maximum extent practicable. Subtasks include:

  - Evaluate each alternative using the evaluation criteria identified in WAC 173-340-360; and
  - Identify the most practicable permanent solution for each typical site.
  - Prepare a draft issue paper that describes the methods, results and conclusions.

- **Report**: The Contractor will integrate the above technical memoranda and draft issue papers into a single report that describes each alternative, discusses the advantages/disadvantages and the feasibility of each option, and evaluates the

degree to which each alternative complies with the minimum requirements for cleanup actions under the MTCA Cleanup Regulation (WAC 173-340-360(2)).

- **Task 4.5: Preparation for Task Force Meetings:** The Contractor will prepare for Task Force meetings where Task 4 issues are being discussed. Meeting preparation includes review of draft reports and memoranda, preparation of briefings and coordination with the Task Force facilitator and/or Task Force members.

5. Institutional Frameworks

The primary task objectives include the following:

- Identify a range of institutional alternatives/processes that are currently being used or that could be used to ensure that area-wide soil contamination problems are identified and remediated in ways that protect human health and the environment;
- Evaluate the feasibility of implementing the various institutional alternatives (including current institutional barriers such as funding, legal authority, processes, coordination, etc.);
- Identify changes that could be implemented to help overcome current institutional barriers.

To meet these objectives, the Contractor will perform the following tasks:

- **Task 5.1: Task Management**: The Contractor shall that tasks and products meet Ecology's needs and are completed in accordance with agreed-upon schedules and budgets. This includes establishing and maintaining effective communication and coordination with individuals working on Task 5 activities, the task managers for other tasks and Ecology, monitoring progress on individual subtasks and identifying and responding to new circumstances.
- **Task 5.2: Review Approaches in Other States**: The Contractor will survey other states to determine the extent of historical pesticide contamination nationally and to learn how other states are responding to the problem. (See Task 3.1 description above)
- **Task 5.3: Institutional Frameworks Case Studies:** The Contractor will prepare 3-5 case studies which document the processes and issues associated with addressing area-wide contamination problems in Washington and other parts of the United States. This will include both retrospective situations (specific cleanup or land use development projects that have been implemented) and prospective situations (specific cleanup or land use development projects that might be implemented in areas containing widespread low-to-moderate soil contamination). The Contractor will prepare a technical memorandum that describes each project, agency processes used to address contamination problems and issues/challenges faced by public and private entities that were faced (might be faced) during each project.
- **Task 5.4: Identification of Institutional Alternatives**: The Contractor will identify and characterize a range of institutional alternatives/processes that are currently being used or that could be used to ensure that area-wide soil contamination problems are identified and remediated in ways that protect human health and the environment. Alternatives include, but are not limited to, the following: MTCA cleanup process (formal and voluntary); local permitting/planning processes; and oversight by financial institutions. Subtasks include:

- Identify and describe institutional alternatives for compiling and providing access to environmental information on the nature and extent of area-wide soil contamination problems;
- Identify and describe institutional alternatives for reviewing and approving measures to reduce human health and environmental risks;
- Identify and describe institutional alternatives for resolving cleanup liability issues associated with individual properties and projects.
- Prepare a draft issue paper describing each alternative.

- **Task 5.6: Legal Analysis Issue Paper**: The Office of the Attorney General and Ecology will analyze key legal issues associated with each of the identified institutional alternatives. The legal analysis results and conclusions will be provided to the Contractor as a draft and final issue paper.

- **Task 5.7: Funding Analysis Issue Paper**: The Contractor will evaluate each of the identified institutional alternatives in terms of funding needs, funding mechanisms and the feasibility of those funding alternatives. Subtasks include the following:

  - Estimate financial needs associated with implementing each institutional alternative;
  - Estimate cleanup costs for typical projects (See task 4.4);
  - Identify funding mechanisms (e.g. permit fees, public funding, etc) for meeting the financial needs associated with each institutional alternative;
  - Identify available funding sources (e.g. State Toxics Control Act, etc.);
  - Identify steps/processes needed to implement the identified funding mechanisms;
  - Identify the feasibility of implementing the identified funding mechanisms; and

- **Task 5.8: Institutional Analysis Issue Paper**: The Contractor will examine the agencies/organizations and processes to determine the operational feasibility of each of the identified institutional alternatives. Subtasks include the following:

  - Describe institutional process involved with implementing each alternative (e.g. implementing agencies or organizations, review/approval processes, etc)
  - Identify changes to existing processes that would be needed to provide adequate assistance/oversight/approval;
  - Identify barriers to such changes and the feasibility of overcoming those institutional barriers; and
  - Prepare a draft and final issue paper describing the results and conclusions of both the funding analysis and institutional analysis.

- **Task 5.9: Preparation for Task Force Meetings:** The Contractor will prepare for Task Force meetings where Task 5 issues are being discussed. Meeting preparation includes review of draft reports and memoranda, preparation of briefings and coordination with the Task Force facilitator and/or Task Force members.

6. Public Involvement

Public understanding and acceptance of the area-wide soil contamination strategy will be important for the long-term success of this effort. Public understanding and acceptance can be enhanced by an effective public education and involvement program during the strategy development phase. Key objectives include:

- Provide accurate and understandable information on the health risks associated with area-wide soil contamination problems and the costs associated with addressing those problems;
- Educate and inform stakeholders about the advantages and disadvantages associated with alternative approaches for addressing area-wide soil contamination problems;
- Provide opportunities for the public to participate in the development and review of proposed approaches and products
- Assist agencies to understand broad community issues and concerns that will impact the feasibility and/or public acceptance of project recommendations.

To meet these objectives, the Contractor will perform the following tasks:

- **Task 6.1: Task Management:** The Contractor shall that tasks and products meet Ecology's needs and are completed in accordance with agreed-upon schedules and budgets. This includes establishing and maintaining effective communication and coordination with individuals working on Task 6 activities, the task managers for other tasks and Ecology, monitoring progress on individual subtasks and identifying and responding to new circumstances.
- **Task 6.2: Stakeholder Survey:** Ecology and the Contractor will meet with a range of interested individuals and organizations to identify key issues and concerns. Multiple meeting formats (e.g. one-on-one meetings, small group meetings, focus groups, etc) may be used. These meetings will serve to help the agencies identify levels of interest, information needs and opportunities for public involvement. To the extent possible, these meetings will be coordinated with the meetings described in Task 2.3.
- **Task 6.3: Identify Key Audiences for the Public Education Effort:** The Contractor will use the results of the stakeholder meetings to prepare a technical memorandum that summarizes key issues and concerns and identifies key audiences for public education efforts.
- **Task 6.4: Public Involvement Plan:** The Contractor shall prepare a draft Public Involvement Plan and solicit public comment on the draft plan. The draft plan should be designed to address issues, interests and information needs identified in Tasks 6.1 and 6.2. The draft plan should describe activities (e.g. meetings, fact sheets, articles etc), timelines, contractor roles/responsibilities and agency roles/responsibilities. The draft plan will be distributed to the Areawide Soil Contamination Task Force for review and comment. The Contractor will prepare a final plan that reflects these review comments.

- **Task 6.5: Implement Involvement Plan**: The Contractor shall implement the contractor tasks identified in the final public involvement plan approved by Ecology. Implementation support will be consistent with the level of funding available.

Contract Deliverables[i]

Task 1: Project Management

- Monthly Reports

Task 2: Areawide Soil Contamination Task Force

Subtask 2.1: Task Management

- Task Force Work Plan (draft and final)

  First Draft – Two weeks after first Task Force meeting
  Revised Draft – Two weeks after receiving Ecology comments.
  Final – Two weeks after Task Force review and comments.

Subtask 2.3: Issue Identification

- List of interview questions for Task Force Members

  Draft – January 4, 2002
  Final – One week after receiving Ecology comments

Subtask 2.4: Meeting Facilitation

- Task Force Meeting Summaries

  Draft – Two weeks after each Task Force meeting.
  Final – Two weeks after comments from Task Force members.

Subtask 2.8 Task Force Report and Recommendations

- Task Force Report and Recommendations

  First Draft – February 3, 2003[ii]
  Revised Draft – Two weeks after receiving Ecology comments
  Final – June 30, 2003

Task 3: Geographic/Geochemical Assessment: Work Group I

Subtask 3.3 Information Survey

- Survey questions, protocols and interviewee list

  Draft – Three weeks before first scheduled Task Force meeting

- Technical Memorandum (note: Memorandum will include results from subtasks 3.3, 4.3, and 5.2)

  Draft – April 5, 2002 (this date is contingent on the first scheduled Task Force meeting occurring no later than February 8, 2002; if the first scheduled meeting occurs later, this due date for the deliverables will move accordingly).

Subtask 3.4: Preliminary Estimates

- Issue Paper

  First Draft – May 1, 2002
  Revised Draft – Two weeks after receiving Ecology comments
  Final – Two weeks after receiving Work Group comments

Subtask 3.6 Yakima County Pilot Project – Confirmational Sampling

- Study design memorandum

  Draft – March 1, 2002
  Final – Two weeks after receiving Work Group and/or sampling design team comments

- Sampling and Analysis Plan (including SAP/QAPP/HSP)

  Draft – March 1, 2002
  Final – Two weeks after receiving Work Group and/or sampling design team comments

- Confirmational Sampling Technical Memorandum

  Draft – July 18, 2002

Subtask 3.7 Pilot Project Report

- Report

  First Draft – September 24, 2002
  Revised Draft – Two weeks after receiving Ecology comments
  Final – Two weeks after receiving Work Group comments

Subtask 3.8 Tools for Identifying Area-wide Soil Contamination Problems

- Report (including Boilerplate Scope of Work documents)

  First Draft – September 21, 2002
  Revised Draft – Two weeks after receiving Ecology comments
  Final – Two weeks after receiving Work Group/Task Force comments

Subtask 3.9 Regional Variations in Natural Background Concentrations

- Technical Memorandum

  Draft – October 30, 2002

Subtask 3.10: Sampling Guidance

- Sampling guidance document

  First Draft – February 6, 2002
  Revised Draft – Two weeks after receiving Ecology comments
  Final – Two weeks after receiving Work Group comments

Task 4: Protective Measures: Work Group II

Subtask 4.3: Literature Review and State Survey

- Technical memorandum (note: Memorandum will include results from subtasks 3.3, 4.3, and 5.2)

  Draft – April 15, 2002

Subtask 4.4: Model Remedies

- Site Categories/Range of Alternatives Technical Memorandum

  First Draft – May 3, 2002
  Revised Draft – Two weeks after receiving comments from members of Work Group II

- Cost Analysis Issue Paper

  Draft – May 17, 2002

- Human Health and Environmental Assessment Issue Paper

  Draft – May 24, 2002

- Permanent Solutions Issue Paper

  Draft – July 22, 2002

- Model Remedy Report

  First Draft – August 26, 2002
  Revised Draft – Two weeks after receiving Ecology comments
  Final – Two weeks after receiving Work Group and Task Force comments

Task 5: Institutional Frameworks

Subtask 5.1: Review Approaches in Other States

- Technical memorandum (Memorandum will include results from subtasks 3.3, 4.3, & 5.2)

  Draft – April 5, 2003

Subtask 5.2: Institutional Frameworks Case Studies

- Technical memorandum

  First Draft – May 28, 2002
  Revised Draft – Two weeks after receiving Ecology comments

Subtask 5.4: Identification of Institutional Alternatives

- Technical memorandum

  First Draft – June 26, 2002
  Revised Draft – Two weeks after receiving Ecology comments

Subtasks 5.6/5.7: Funding and Institutional Analysis

- Issue paper

  Draft – October 1, 2002
  Revised Draft - Two weeks after receiving Ecology comments

Task 6: Public Involvement

Subtask 6.2: Stakeholder Survey

- Interview Questions/Background Materials

  Draft – January 4, 2002
  Final – One week after receiving Ecology comments.

Subtask 6.3: Identification of Key Audiences

- Technical Memorandum

  First Draft – March 1, 2002
  (note: Ecology comments on this submittal will be provided within one week of its receipt; comments will be addressed in writing, as appropriate, in the draft public involvement plan)

Subtask 6.4 Public Involvement Plan

- Public Involvement Plan

  First Draft – March 15, 2002
  Revised Draft – Two weeks after receiving Ecology comments
  Public Review Draft – Two weeks after receiving Task Force comments
  Final – Two weeks after receiving public comments

Subtask 6.5 Public Involvement Plan Implementation

- Tasks, schedules and deliverables will be specified in the final public involvement plan mutually agreed upon by Ecology and the Contractor (Subtask 6.4).

[i] The schedule for contract deliverables will be reviewed and potentially amended following review of the draft Task Force Work Plan.

[ii] Individual chapters may be submitted separately as they are completed.